Before entry of this Amendment, claims 1-19 were pending in this application. After entry of this Amendment, claims 20-74 are pending in this application.

The originally-filed specification, claims, abstract, and drawings fully support the amendments to the specification and the addition of new claims 20-74. No new matter was introduced.

In the Office Action, the Examiner rejected claims 1-5, 12, and 13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,650,693 to Kuisl ("Kuisl"); rejected claims 6, 7, 9-11, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Kuisl; and stated that claim 8 would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

Applicants gratefully acknowledge the Examiner's statement that claim 8 would be allowable if rewritten.

Rejections Under 35 U.S.C. § 102(b)

Applicants submit that the cancellation, without prejudice or disclaimer, of claims 1-19; and the addition of new claims 20-74 obviates the Examiner's rejections under 35 U.S.C. § 102(b).

Rejections Under 35 U.S.C. § 103(a)

Applicants submit that the cancellation, without prejudice or disclaimer, of claims 1-19; and the addition of new claims 20-74 also obviates the Examiner's rejections under 35 U.S.C. § 103(a).

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Claim Scope

In discussing the specification, claims, abstract, and drawings in this Amendment, it is to be understood that Applicants are in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicants believe that Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Summary

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and reexamination of this Application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: April 17, 2003

By: [signature]
Michael L. Woods
Reg. No. 50,811

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

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APPENDIX TO AMENDMENT

Amendments to the Specification

Please amend the specification, as follows:

Page 6, lines 5-10, amend the paragraph, as follows:

According to an embodiment of the present invention, the water and the first gaseous or vapor phase composition are reacted in the substantial absence of an unreactive carrier gas. Preferably, the first and the second gaseous or vapor phase compositions are obtained by separately heating, under pressure, the [said] first and second compositions, each contained as pure liquid in[to] a respective supply tank.

Page 6, lines 11-23, amend the paragraph, as follows:

New matter?

According to a preferred embodiment of the present invention, the first and the second ~~gaseous or vapor phase compositions are~~ supplied at a predetermined temperature to the chamber [at a predetermined temperature], said predetermined temperature ~~being a temperature~~ at which ~~the hydrolysis reaction between the two~~ compositions is substantially incomplete. With the expression "substantially incomplete hydrolysis reaction[",]," it is intended that the dimension of the silica particles produced by the reaction is sufficiently small in order to allow being transported by the gas stream without giving rise to unwanted deposition of material at the inlet of the reaction chamber, as observed in prior-art processes. In particular, said predetermined

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

temperature is about 800 °C or lower, preferably from about 600 °C to about 750 °C, a temperature of about 700 °C being particularly preferred.

Page 7, lines 7-10, amend the paragraph, as follows:

- a reaction chamber in which the gaseous or vapor phase water and the first gaseous or vapor phase composition are reacted to form an aerosol of glass, said reaction chamber being provided with an outlet through which the aerosol of glass is directed toward the target;

Page 12, line 15 - page 13, line 4, amend the paragraph, as follows:

As shown in detail in [figg] Figs. 4 and 5, each element of the injection system comprises an injection chamber 34, wherein a first tubular member 51 is disposed inside a second tubular member 50. The tubular member 51 is provided with an inlet 52 through which the gaseous reactant is fed and is closed at the opposite end, while the tubular member 50 is closed at both ends. The tubular member 50 is provided with an elongated nozzle 41 for injecting the gaseous reactants into the reactor chamber. Said nozzle has preferably an elongated cross-section, with an elongated rectangular opening through which reactants are fed into the reaction chamber. The tubular member 51 is provided, on its upper half, with a series of holes 54. In order to provide flow uniformity, the dimensions of holes 54 preferably decrease from the inlet towards the opposite end of the tube. Said holes are disposed asymmetrically with respect to the axial direction of the injection system. As shown in [fig 5] Fig. 4, the axes "a" of the holes 54

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

preferably form an angle β with the axis "b" of the nozzle, which is from about 30 to about 60 degrees. When the gaseous reactant is fed through the inlet 52, it flows along the inner tubular member 51 and then, through holes 54, into the tubular member 50, from which it is injected, through nozzle 41, into the reactor chamber.

Page 13, lines 5-10, amend the paragraph, as follows:

The dimension of holes 54, located [onto] <u>in</u> the tubular member [52] <u>51,</u> are selected in order to impart uniformity to the flow entering [into] the [fist] <u>first</u> tubular member. For instance, their diameter may be gradually reduced<u>,</u> from about 2 mm close to the inlet of gas[,] to about 1 mm at the opposite end. However, different dimensions and arrangements can be used<u>,</u> depending on the specific process parameters.

Page 22, line 13 - page 23, line 4, amend the paragraph, as follows:

The combination of these two temperature gradients causes the stream of gas and particles to be confined in the central part of the reactor, avoiding deposition on the perimeter walls of it. As a matter of fact, the soot/gas stream being transported towards the deposition target tends to increase its temperature (from an initial temperature of [e.g.]<u>, for example,</u> 700 °C), as a consequence of the heating generated by the exothermic hydrolysis reaction and by the heating elements. If the temperature of the inner walls of the reactor chamber is kept constant along its whole length (e.g.<u>,</u> at about 1000 °C), it may happen that the glass particles

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

reach temperatures comparable to those of the reactor's walls, with possible deposition of said particles onto said walls. If the inner walls of the reactor are instead subjected to a controlled longitudinal thermal gradient (e.g., with a temperature variation from about 1200 °C to about 1600 °C), the particles transported in the stream will encounter subsequent zones of the reactor wherein the transversal gradient is suitably set in order to have a temperature of the wall substantially higher than the temperature of the glass particles contained in the stream. Accordingly, said particles will be subjected to thermophoretic repulsion forces generated by the walls having a higher temperature, which will tend to confine them in the central part of the reactor for the whole height of it, thus avoiding the unwanted deposition onto the reactor's walls.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com